REMARKS

Claims 1-7, 10-12, 16-22, 25-27, 31-34, 36-43 and 45-58 are pending. Claims 4, 19, 36, 45 and 58 are currently amended. Claims 8-9, 13-15, 23, 24, 28-30, 35, 44 and 59 are canceled.

The Examiner has rejected claims 1-7, 10-12, 16-22, 25-27 and 31-59 under 35 U.S.C. § 103(a) as being unpatentable over Applicant's admitted prior art in view of Craft et al. (U.S. Patent No. 6,427,171). Applicant respectfully traverses the Examiner's rejections.

As an initial matter, neither Craft nor the admitted prior art address load balancing between servers in a server farm. Thus, neither reference is an appropriate primary reference. Further, in Craft, a host protocol stack 44 handles control and exception conditions, and an INIC/CPD 30 handles data movement. A communication control block CCB stores information that allows the INIC/CPD 30 to determine whether a received packet should be passed to the host protocol stack 44 for protocol stack processing. In both cases, all application-level packet processing is done by the host computer 20, not the INIC/CPD 30. See Craft, Figure 3. See also Column 4, lines 29-34 ("the INIC/CPD removes lower layer headers and sends 69 the remaining application data from the frame directly into its final destination in the host") and lines 55-61 ("The CCB also contains storage space for per-transfer information used to facilitate moving application-level data contained within subsequent related message packets directly to a host application"). Thus, the INIC/CPD 30 does not perform application-level processing.

Turning to the claims, independent claim 1 recites, "a first computing device configured to ... when the first computing device is selected to service the client, bind the data structure associated with a connection to the client to an application of the first computing device; and when the first computing device is not selected to service the client, migrate the data structure associated with the connection to the selected computing device." The Examiner appears to contend the INIC/CPD 30 corresponds to the recited first computing device. The INIC/CPD 30, however, does not bind the data structure associated with a connection to the client to an application of the INIC/CPD 30. Thus, Craft, alone or in combination with the admitted prior art, does not teach, suggest or motivate "a first computing device configured to ... bind the data structure associated with a connection to the client to an application of the first

computing device," as recited in claim 1. To the extent the Examiner contends a combination of the INIC/CPD 30 and the host computer 20 is the recited first computing device, Craft does not address how the combination of the INIC/CPD 30 and the host computer 20 handle packets that are not serviced by the host computer 20, as recited in claim 1. Thus Craft, alone or in combination with the admitted prior art, does not teach, suggest or motivate a first computing device configured to "migrate the data structure associated with the connection to the selected computing device." Claims 2, 3, 7 and 31-33 depend from claim 1, and are allowable at least by virtue of their dependencies. Thus, claims 1-3, 7 and 31-33 are allowable.

Independent claim 4, as amended, recites "a first computing device configured to ... when the packet is associated with a connection that corresponds to an application of the first computing device, forward the packet and a reference to an associated connection endpoint to a network protocol stack of the first computing device that is external to an operating system of the first computing device; and when the packet is not associated with a connection that corresponds to an application of the first computing device, selectively encapsulate the packet and forward the encapsulated packet." The Examiner appears to alternately refer to the host computer 20 and the INIC/CPD 30 as the recited first computing device. To the extent the Examiner contends the INIC/CPD 30 is the first computing device, the INIC/CPD 30 does not perform application level packet processing, and thus does not teach, suggest or motivate "an application of the first computing device" as recited. To the extent the Examiner contends the combination of the INIC/CPD 30 and the host computer 20 is the recited first computing device, Craft does not address forwarding of packets that are not associated with a connection that corresponds to an application of the host computer 20, and thus does not teach, suggest or motivate "selectively encapsulate the packet and forward the encapsulated packet," as recited. Applicants further note that Column 4, lines 25-46 of Craft discuss the INIC/CPD 30 removing "lower layer headers and forwarding the remaining application data" to the host processor 20. Thus, Craft, alone or in combination with the admitted prior art, does not teach, suggest or motivate the INIC/CPD 30 encapsulating and forwarding packets to the host processor 20, as incorrectly suggested by the Examiner. Claims 5, 6, 34 and 36 depend from claim 4, and are allowable at least by virtue of their dependencies. Accordingly, claims 4-6, 34 and 36 are allowable.

Independent claim 10 recites "a first computing device configured to: associate an application of the first computing device with a data structure associated with a connection to a client; and selectively: disassociate the application of the first computing device from the data structure." The Examiner appears to contend alternately that the INIC/CPD 30 or the host computer 20 corresponds to the recited first computing device. To the extent the Examiner contends the INIC/CPD 30 is the first computing device, the INIC/CPD 30 of Craft does not perform application-level packet processing, as discussed above. Thus, the INIC/CPD does not have an application to "disassociate," from itself as recited. To the extent the Examiner contends the host computer 20 corresponds to the recited first computing device, the host computer 20 does not "disassociate the application of the first computing device from the data structure." Instead, the host computer 20 creates a communication control block that is associated with an application of the host computer 20 and sends this to the INIC/CPD 30. See Craft, column 4, lines 47-61. The CCB is not disassociated with the application of the host because the host, not the INIC/CPD 30, is performing application data processing. See Craft, Figure 3. Thus, Craft, alone or in combination with the admitted prior art, does not teach suggest or motivate a first computing device configured to "disassociate the application of the first computing device from the data structure," as recited. Claims 11, 12 and 37-39 depend from claim 10. Accordingly, Applicant respectfully submits that claims 10-12 and 37-39 are allowable.

Independent claim 16, as amended, recites, "[a] method performed by a first server ... when the first server is selected to service the client, binding the data structure associated with the connection to the client to an application of the first server; and when the first server is not selected to service the client, migrating the data structure associated with the connection to the selected server." The Examiner relies on the arguments used to reject claim 1. As discussed above, the INIC/CPD 30 does not perform application level processing, and thus cthe INIC/CPD 30 cannot be one of the servers. Accordingly, for reasons similar to those discussed above with regard to claim 1, Craft, alone or in combination with the admitted prior art, does not teach, suggest or motivate a method performed by a first server comprising "when the first server is selected to service the client, binding the data structure associated with the connection to the client to an application of the first server; and when the first server is not

selected to service the client, migrating the data structure associated with the connection to the selected server," as recited. Claims 17, 18, 22 and 40-42 depend from claim 16, and are allowable at least by virtue of their dependencies. Thus, Applicant respectfully submits that claims 16-18, 22 and 40-42 are allowable.

Independent claim 19, as amended, recites, "[a] method performed by a first computing device of an information processing system, the method comprising: ... when the packet is associated with a connection that corresponds to an application of the first computing device, forwarding the packet and a reference to an associated connection endpoint to a network protocol stack of the first computing device that is external to an operating system of the first computing device; and when the packet is not associated with a connection that corresponds to an application of the first computing device, selectively encapsulating the packet and forwarding the encapsulated packet." The Examiner relies on the arguments used to reject claim 4. Accordingly, for reasons similar to those discussed above with regard to claim 4, Craft does not address forwarding packets that are not associated with a connection that corresponds to an application of the host computer 20. Thus, Craft, alone or in combination with the admitted prior art, does not teach, suggest or motivate a method performed by a first computing device comprising "when the packet is associated with a connection that corresponds to an application of the first computing device, forwarding the packet and a reference to an associated connection endpoint to a network protocol stack of the first computing device that is external to an operating system of the first computing device; and when the packet is not associated with a connection that corresponds to an application of the first computing device, selectively encapsulating the packet and forwarding the encapsulated packet." Claims 20, 21, 43 and 45 depend from claim 19, and are allowable at least by virtue of their dependencies. Accordingly, Applicant respectfully submits that claims 19-21, 43 and 45 are allowable.

Independent claim 25 recites, "[a] method performed by a first computing device ... comprising: associating an application of the first computing device with a data structure associated with a connection to a client; and selectively: disassociating the application of the first computing device from the data structure." The Examiner relies on the arguments used to reject claim 10. Accordingly, for reasons similar to those discussed above with regard to claim 10,

neither the INIC/CPD 30 nor the host computer 20 perform selectively "disassociating the application of the first computing device from the data structure," because the host application is always associated with a CCB. See Figure 3 of Craft. Thus, Craft, alone or in combination with the admitted prior art, does not teach, suggest or motivate a method performed by a first computing device comprising "associating an application of the first computing device with a data structure associated with a connection to a client; and selectively: disassociating the application of the first computing device from the data structure," as recited. Claims 26, 27 and 46-48 depend from claim 25, and are allowable at least by virtue of their dependencies. Accordingly, Applicant respectfully submits that claims 25-27 and 46-48 are allowable.

Independent claim 49 recites, "controlling a processor of a first server ... when the packet is associated with a connection endpoint bound to a socket of an application of the first server, forwarding the packet and a reference to the associated connection endpoint to a protocol stack of the first server; and when the packet is associated with a connection endpoint bound to a socket of an application of a second server, encapsulating the packet and forwarding the encapsulated packet to a second server." Claim 49 is allowable for reasons similar to those set forth above with respect to claims 4 and 16. There is no teaching, motivation or suggestion in Craft to forward a packet to a second server. Claims 50-52 depend from claim 49, and are allowable at least by virtue of their dependencies. Accordingly, Applicant respectfully submits that claims 49-52 are allowable.

Independent claim 53 recites, "controlling a processor of a first server to selectively load balance and direct network requests among a plurality of servers by: associating an application of the first server to a data structure associated with a connection with a client; disassociating the application of the first server from the data structure associated with the connection." Claim 53 is allowable for reasons similar to those set forth above with respect to claims 10 and 16. Craft does not teach, suggest or motivate disassociating the host computer 20 application from the CCB. Claims 54-57 depend from claim 53, and are allowable at least by virtue of their dependencies. Accordingly, Applicant respectfully submits that claims 53-57 are allowable.

Independent claim 58, as amended, recites, "A first server, comprising ... a module configured to selectively bind the data structure associated with the connection to the client to an application of the first server, and, when the first server is not selected to service the client, to migrate the data structure associated with the connection. Claim 58 is allowable for reasons similar to those set forth above with respect to claim 1. Craft does not teach, suggest or motivate selectively binding as the host computer 20 application is always bound to the CCB.

Therefore, for these reasons and others, since Craft does not teach, suggest, or motivate one or more elements or acts of each of Applicant's claims 1-7, 10-12, 16-22, 25-27 and 31-34, 36-43, and 45-58, Applicant's claims are not anticipated or rendered obvious by the admitted prior art in view of Craft. In the event the Examiner disagrees or finds minor informalities, Applicant respectfully requests a telephone interview to discuss the Examiner's issues and to expeditiously resolve prosecution of this application. Accompanying this Amendment is an Applicant Initiated Interview Request Form in the event the Examiner does not agree that the claims are allowable over the cited references.

In closing, Applicant respectfully requests the Examiner to enter these amendments and to reconsider this application and its early allowance. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

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